DOCUMENT RESUME

ED 391 031 CE 070 597

AUTHOR Shoolap, Charoon; Choomnoom, Siripan
TITLE A Case Study on the Status of Technical and Vocational Education in Thailand. Case Studies on Technical and Vocational Education in Asia and the Pacific.
INSTITUTION Royal Melbourne Inst. of Tech. (Australia).
SPONS AGENCY United Nations Educational, Scientific, and Cultural Organization, Paris (France).
REPORT NO ISBN-1-86272-455-4
PUB DATE 94
NOTE 31p.; For related documents, see CE 070 584-598. Product of the International Project on Technical and Vocational Education (UNEVOC).
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Educational Development; *Educational History; *Educational Improvement; Educational Policy; *Educational Trends; Foreign Countries; Policy Formation; Postsecondary Education; Public Policy; Secondary Education; *Technical Education; Technology Education; *Vocational Education
IDENTIFIERS *Thailand

ABSTRACT

This two-part report presents an overview of the vocational and technical education system in Thailand. The first part is a review of the current and likely future situations pertaining to vocational and technical education in that country. An analysis of economic conditions, human resource development, and the existing technical and vocational education system is presented. In addition, the future of technical and vocational education is forecast. The second part of the report focuses on policies to promote close linkages between technical and vocational education institutions and industries, an issue linked to raising the status of technical and vocational education in Thailand. Some of the information provided includes the following: (1) 3-year, 2-year, and 1-year bachelor of technology programs are available; (2) five major areas of study are specified: trade and industry, agriculture, home economics, business, and arts and crafts; and (3) national policy places high priority on expansion of secondary education and developing technical skills that are needed in the economy. (KC)

UNEVOC

CASE STUDIES ON TECHNICAL AND VOCATIONAL EDUCATION IN ASIA AND THE PACIFIC

UNESCO

THAILAND

CASE STUDIES ON TECHNICAL AND VOCATIONAL EDUCATION IN ASIA AND THE PACIFIC

A Case Study on the Status of Technical and Vocational Education in Thailand

Researchers: **Charoon Shoolap**
Director General
Department of Vocational Education
Ministry of Education
Siripan Choomnoom
Planning Specialist
Planning Division
Department of Vocational Education
Thailand

First published 1994

ISBN 1 86272 455 4

Published by RMIT for UNESCO

The UNESCO UNEVOC Case Studies on Technical and Vocational Education in Asia and the Pacific project was managed by:
Associated UNEVOC Centre
Royal Melbourne Institute of Technology
GPO Box 2476V
Melbourne
Victoria
Australia 3001
Tel: +613 6603790
Fax: +613 6603786

Printed by:
Communication Services Unit
Royal Melbourne Institute of Technology
GPO Box 2476V
Melbourne
Victoria
Australia 3001

UNEVOC is the International Project on Technical and Vocational Education which was launched by UNESCO in August 1992.
In the field of technical and vocational education, UNEVOC aims to foster the international exchange of ideas, experience and studies on policy issues; strengthen national research and development capabilities; facilitiate access to data bases and documentation; promote innovations in staff development; and support international cooperative actions.

KEY FACTS

Area	518,115.02 sq km
Population	57,788,965 persons, male: 29.018.092 female: 28,770,873
Population growth rate	1.2%
Official title of country	Thailand

Climate and geography

The country has a tropical climate with a high degree of humidity. Average low temperature is 20 degrees Celsius and high temperature is 37 degrees Celsius. There are seasons which include hot (March and May), rainy (June to October), and cool (November to February). Thailand is situated in the heart of Southeast Asia and as a gateway to Indochina. Thailand borders with Lao in the north and northeast, the Union of Myanmar in the north and west; the Andman Sea in the west; Cambodia and the Gulf of Thailand in the east; and Malaysia in the south.

Official language
"Thai" is the national and official language

Ruling party	Democratic Party
Head of government	Mr Chuan Leekpai, Prime Minister
Currency used	Baht
Political system	Thailand has been a democratic constitutional monarchy since 1932. At present, the parliament is composed of 270 appointed senators and 360 elected representatives. The Prime Minister is selected from among the members of the House of Representatives.

Education
Educational system is 6-3-3. That is six years of primary education, three years of lower secondary, and another three years of upper secondary. Six years of schooling is compulsory. Nine years of compulsory education is planned to implement in the next five year plan (1997-2001).

Social Welfare
Basic health care, occupational training, income tax exempt for the poor, and public residents for the old age people are provided. Funds for living expenses of workers during a certain period of unemployment are required for enterprises to provide.

Economy
Agriculture is the main occupation which involves about 65% of total number of population. Thai economy has grown at an average of 10.5% annually during 1987-1991, and is expected to grow at least 8% annually in the next few years. Industry, construction, and services are major sectors contributing to economic growth.

LIST OF TABLES

ABBREVIATIONS

TVE	Technical and Vocational Education
GDP	Gross National Product
MOE	Ministry of Education
MUE	Ministry of University Affairs
MOI	Ministry of Interior
MPH	Ministry of Public Health
DOVE	Department of Vocational Education
RIT	Rajamongala Institute of Technology
OPEC	Office of the Private Education Commission
KMIT	King Mongkut Institutes of Technology

INTRODUCTION

This paper contains two parts. The first part is a review of the current and likely future situation pertaining to vocational and technical education in Thailand. An analysis of economic conditions, human resource development and the existing technical and vocational education system is presented. In addition, forecast of the future situation related to technical and vocational education (TVE) is described. The second part focuses on policies to promote close linkages between TVE institutions and industries, which is a significant issue for raising the status of TVE in Thailand.

1. AN ANALYSIS OF PRESENT SITUATION

1.1 ECONOMIC SITUATION

During the Sixth National Development Plan (1987–1991), the Thai economy had grown more than targeted. The country's overall growth rate had been growing at an average of more than 10 per cent annually with the peak of 13.2 per cent in 1988. Even though agriculture has been the main occupation, which involved about 65 per cent of the total population, GDP in the industrial sector has been increasingly higher than that of the agricultural sector. For example, in 1960, share of GDP generated from agriculture was 38.3 per cent while in manufacture it was 11.6 per cent. In 1990, the GDP shares of agriculture and manufacturing were 14.4 per cent and 24.7 per cent respectively. The high economic growth has led to a substantial increase in employment, with an average employment growth of 554,000 persons per year during the Sixth National Development Plan (1987–1991). Consequently, pressure on wage increases has resulted in higher income and better purchasing power. Per capita income has increased from 21,000 baht in 1986 to 43,405 baht in 1992, resulting in improving the general standard of living. It was expected that the Thai economy would continue to grow during the Seventh Plan (1992–1996). A number of government policies which have contributed to the high growth rate of economy include foreign investment policy, export promotion policy, tariff and tax policy, tourism promotion policy, and others.

Table 1
Major Development Targets of Economic and Social Development during the Seventh Plan (1992–1996)

	Sixth Plan Outcomes (1987–1991)	Seventh Plan Targets (1992–1996)
1. Economic growth (% per year at constant prices)	10.5%	8.2%
1.1 Agriculture sector	3.4%	3.4%
1.2 Non-agriculture sector	12.1%	8.6%
Industry	13.7%	9.5%
Construction	8.7%	8.9%
Services and others	11.0%	8.1%
2. Per capita income (US$/year)	1,608	2,784
3. Number of Population (million)	56.9	61.0
Population growth rate (per cent)	1.4%	1.2%
4. Employment (million persons)	32.0	34.9
5. Transition rate to secondary school	46.2%	73%

Source: The Seventh National Economic and Social Development Plan (1992-1996)

According to Table 1, Thailand's economic growth was estimated to be 8.2 per cent annually during the Seventh Plan period, as compared with 10.5 per cent annually during 1987–1990. Industry, construction, and services were major sectors contributing to economic growth at about 9.5 per cent, 8.9 per cent and 8.1 per cent respectively, while the agricultural sector was not expected to increase during the Seventh Plan period. Per capita income per year will be 71,000 baht or US$2,784 during the Seventh Plan period as compared with 41,000 baht or US$1,608 in the Sixth Plan period. Employment will be increased from 32.0 million persons to 34.9 million persons during the Seventh plan period. Increase of per capita income and employment would result in greater job opportunities and higher wages. However, transition to secondary school of primary school graduates was expected to increase to 73 per cent in the Seventh Plan period even though during the Sixth Plan period only 46.2 per cent of primary school graduates enrolled in secondary schools.

The growth of each sector in the Seventh Plan would lead to a great demand of qualified manpower. This means that the transition rate of primary leavers needs to be increased, appropriate education and training models need to be developed and provided for those who will be out of the school system.

Due to the rapid growth of economy as described, there was not only the problem of manpower shortage, but society has also a greater difficulty adjusting to the new economic change. A fundamentally agriculture based economy has become a more industrialised one. A rural society has been transformed to a more urbanised one. Traditional ways of life have been changed toward a more modernised lifestyle, with impact on the spiritual, moral, cultural, and general pattern of living. It is a necessity to promote people's role in determining and bringing about growth and development. Human resources need to be developed to the fullest capabilities and potentialities, and in harmony with the rapidly changing economy.

1.2 HUMAN RESOURCE DEVELOPMENT

1.2.1 EDUCATION SYSTEM

The structure of the Thai national system is 6-3-3, with six years of primary education, three years of lower secondary and another three years of upper secondary. Six years of primary education is compulsory, as mentioned earlier. It is planned to extend to another three years or nine years compulsory education by the end of the Seventh National Development Plan (1996).

Table 2
Comparison of Number of Students in Each Educational Level and Age-Group in 1993 Academic Year

Educational Level	Age Group	Number of Students	Per Cent of Total Population (in each age group)
Pre-primary	3-5	1,605,818	45.82
Primary	6-11	6,587,164	90.51
Lower-Secondary	12-14	2,022,320	54.23
Upper-Secondary	15-17	1,068,921	28.53
- General		572,920	
- Vocational		496,001	
Higher Education	18-22	571,401	11.66
Total	**23-22**	**11,855,624**	**51.19**

Source: MOE Statistics 1993 Academic Year

Table 2 shows the number of students in each educational level and age-group in 1993 compared with the total in each age group. Pre-primary, primary, lower-secondary, upper secondary, and higher education provided 45.82 per cent, 90.51 per cent, 54.23 per cent, and 28.53 per cent of the total population in each age group respectively. Non-formal education has also played an important role in providing education at pre-primary, secondary, and higher education.

It has been planned that non-formal education and training should expand its roles in providing secondary education; especially to those who are already in the labour force.

1.2.2 ADMINISTRATIVE STRUCTURE AND BUDGET

Human resource development in Thailand has been carried out by different agencies as the follows:

1. Ministry of Education (MOE) is responsible for primary, secondary, vocational/technical education, and teacher training.

2. Ministry of University Affairs (MUA) takes responsibility in public and private universities and institutions of higher education.

3. Ministry of Labor supervises training for upgrading and updating skills of the labour force through a large number of short courses training. The National Skill Testing, Standardising, and Certificating for those who are not in formal schooling are developed and implemented by this Ministry.

4. Ministry of Interior (MOI) provides primary education through municipal authorities; and a number of short courses training in the rural areas by the local authorities.

5. Ministry of Public Health (MPH) carries out specialised education for specific groups in the form of nursing colleges.

6. Ministry of Defence provides training in its military academies.

A number of specialised education and training programs are usually carried out for specific use of manpower in each agency. For example, irrigation manpower has been produced by the Irrigation Department, Ministry of Agriculture, medical technicians have been provided by the Ministry of Public Health, etc.

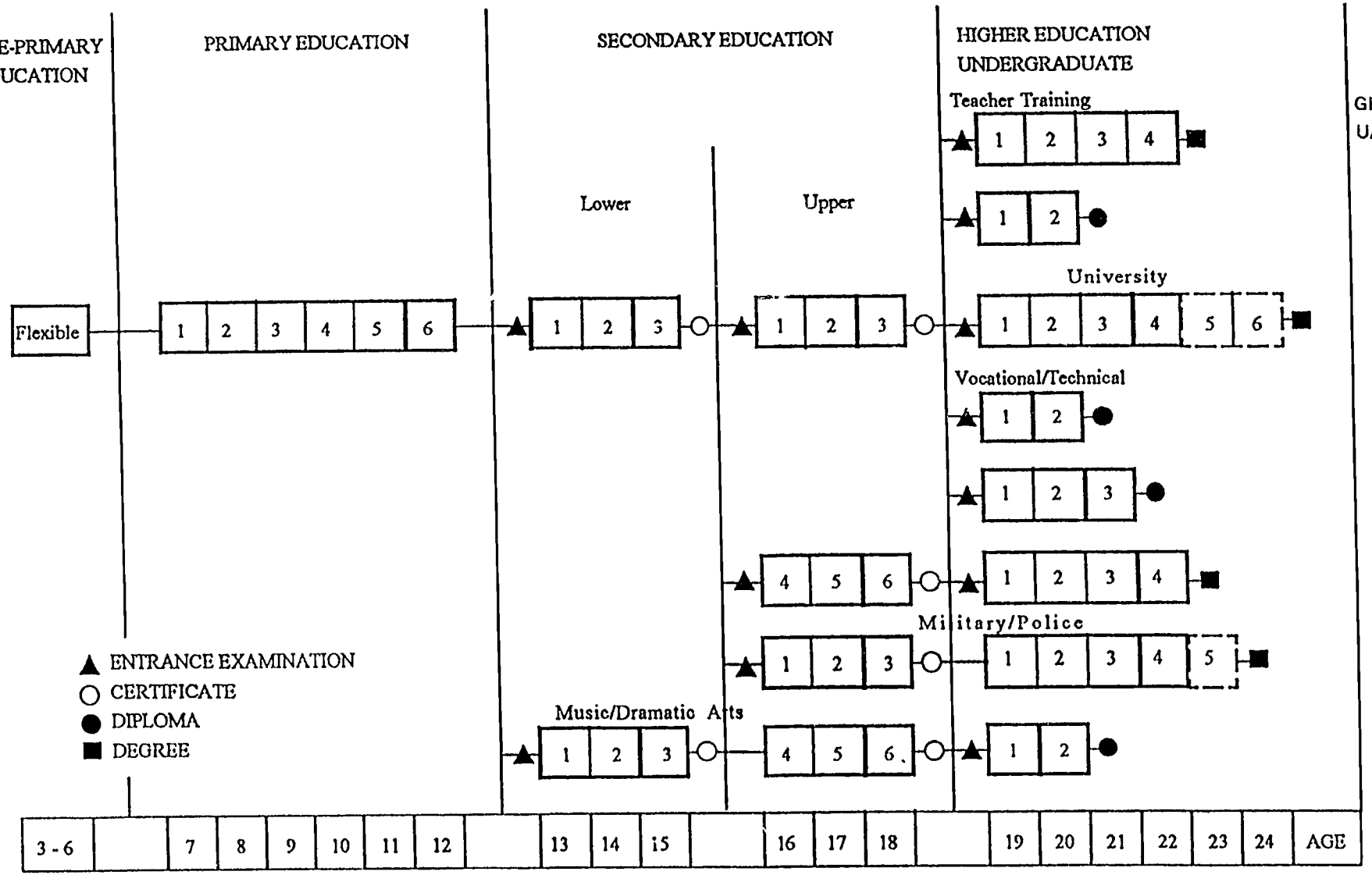
Table 3
National Budget and Educational Budget
(1989-1993)

Unit: Million Baht

Fiscal year	National Budget (NB)		Educational Budget		
	Amount	Growth Rate (%)	Amount	Growth Rate (%)	% of NB
1989	285,500	17.2	47,358.1	8.0	16.6
1990	335,000	17.3	59,962.1	25.8	17.9
1991	387,000	15.7	74,860.6	24.8	19.3
1992	460,400	18.8	86,576.9	18.8	18.8
1993	560,000	21.6	109,869.7	19.6	19.6

Source: Education Statistics, MOE

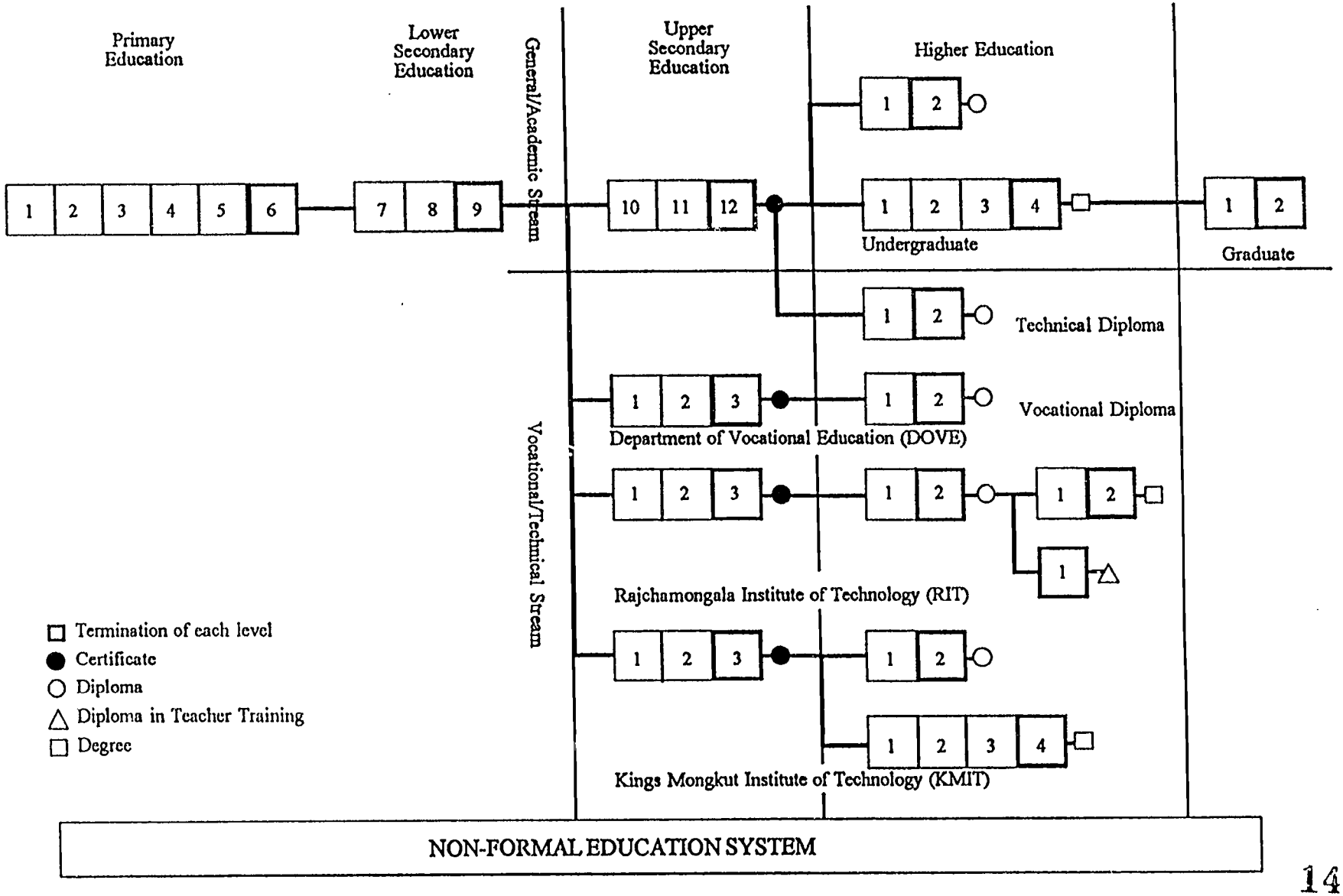
Figure I
The Structure of the National Education System



FIGIX-2

Figure II

The Continuing Process of Technical and Vocational Education



According to Table 3, the educational budget is increasing steadily and occupied almost 20 per cent of the national budget in 1993. The growth rate of the educational budget during 1990–1993 was higher than that of the national budget. Educational budget was 3.2 per cent of G.D.P. during 1989–1993. It was 3.7 per cent of G.D.P. in 1993. At least 5.0 per cent of G.D.P.is expected for educational budget at the end of the Seventh Plan (1996).
The educational budget allocated to the Ministry of Education in 1993 was 88,177.2 million baht or 80.24 per cent of the educational budget, 109,889.8 baht.

Table 4
Ratio of Recurrent and Capital Expenditures of MOE Budget 1989–1993

Fiscal year	Recurrent Cost	Capital Cost
1989	85.9%	14.1%
1990	85.1%	14.9%
1991	83.67%	16.4%
1992	80.1%	19.9%
1993	82.5%	17.5%

Table 4 shows the ratio of recurrent and capital expenditures of the MOE budget during 1989–1993. More than 80 per cent of budget has been allocated for recurrent cost, especially salaries of teaching staff and personnel. Capital expenditures which were allocated for buildings and equipment made up only 14.1 per cent - 19.9 per cent during 1989-1993.

1.2.3 HUMAN RESOURCE SITUATION

With the total population of 57.8 million, there were 33.5 million in labour force and 14.6 million in schooling system. To fulfil the manpower requirements for the rapid economic growth, human resource development has became a major policy issue of Thailand. Formal and non-formal education, skill training, and on-the-job training have been strengthening and speeding up to produce substantial quantity and quality workforce, but limitations still exist.

Table 5
Employed Person by Level of Education Attainment (Per cent Per Year)

Education Attainment	Year			
	1980	1985	1990	1991
None and Less than Primary	13.8	11.8	8.6	7.0
Primary	77.7	76.2	75.0	75.9
Secondary	4.6	6.3	8.5	8.8
Vocational/Technical	1.7	2.5	4.0	4.1
Higher (University)	.7	1.3	2.1	2.3
Teacher Training	1.5	1.9	1.8	1.9
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: Labor force Survey 1980, 1985, 1990, 1991 (The National Statistic Office)

Table 5 shows a large number of the labour force have only primary education. However, after efforts by the government, employed persons who have less than primary and primary education declined, and the numbers of employed persons with secondary education and others increased. Employed persons with vocational/technical education shared 1.7 per cent, 2.5 per cent, 4.0 per cent, and 4.1 per cent in 1980, 1985, 1990, and 1991 respectively, while secondary graduates made up 4.6 per cent, 6.3 per cent, 8.5 per cent, and 8.8 per cent in 1980, 1985, 1990, and 1991 respectively. For a developing country such as Thailand, a better standard of education of the work force, or at least secondary education is required in order that the development goal can be achieved. It is not possible to develop any sector of the economy without well-planned human resource development.

Table 6
Growth Rate of Employed Person by Level of Education Attainment (Per cent Per Year)

Education Attainment.	Year	
	1980 - 1985	1985- 1991
None and Less than Primary	- 2.0%	- 4.8%
Primary	- 1.3%	- 0.3%
Secondary	1.7%	2.5%
Vocational/Technical	0.8%	1.0%
Higher (University)	0.6%	1.0%
Teacher Training	0.4%	0.0%

Source: Labor force Survey 1980, 1985, 1990, 1991

Table 6 presents the growth rate of employed persons by level of education attainment during the period of 1980-1985 and 1985-1991. Obviously, employed persons who have none and less than primary and primary education decline 2.0 per cent and 1.3 per cent during 1980-1985 and 4.8 per cent and 0.3 per cent during 1985-1991 respectively, while educational attainment of the rest increased. However, the growth rate of educational attainment of employed person during 1980-1991 is considered small and needs to be speeded up as much as possible. For vocational and technical education, the growth rate was increased 0.8 per cent and 1.6% during the period of 1980-1985, and 1985-1991 respectively.

2. THE EXISTING TECHNICAL AND VOCATIONAL EDUCATION (TVE) SYSTEM

TVE system in Thailand starts at upper secondary level. A three-year program or vocational certificate curriculum is provided for those who complete lower secondary schooling. A two-year program or technical diploma curriculum is provided for those who complete vocational education certificate or upper secondary education in general stream. Another two-year program of higher diploma in technical education or a Bachelor of technology curriculum is also provided. Short-course vocational training is also provided for those who are out of the schooling system.

Five major areas of study are concentrated:

- trade and industry
- agriculture
- home economics

- business, and
- arts and craft.

The three main agencies responsible for TVE include:

1. Ministry of Education

Three agencies supervise TVE

(a) The Department of Vocational Education (DOVE)

(b) Office of the Private Education Commission (OPEC)

(c) Rajamongala Institute of Technology (RIT)

2. Ministry of University Affairs

Only one institution provides TVE, King Mongkut Institutes of Technology (KMIT)

(a) Department of Vocational Education (DOVE)

The Department of Vocational Education (DOVE) is the largest agency supervising public technical and vocational education institutions. DOVE provides technical and vocational education to 290,324 students in formal certificate and diploma program; and to 237,072 students in short-course vocational training programs in the 1993 academic year. The total permanent instructors was 10,091 while about 3000 were temporary instructors. There are five types of institution under DOVE.

- Technical College
- Agricultural College Vocational College
- Polytechnical College
- Community and Industrial College

In 1993 the total number of colleges under DOVE was 248. At least ten Community and Industrial Colleges and five Polytechnic Colleges will be established each year during the Seventh National Development Plan (1992-1996).

(b) Office of Private Education Commission (OPEC)

Office of Private Education Commission (OPEC) takes care of every type of private school, including technical and vocational schools. Private vocational schools can select to use DOVE or RIT curriculum. The programs and levels of education offered at DOVE, OPEC, and RIT are the same. In the 1992 academic year, there were 303 private vocational schools offering formal programs to 291,625 students; 1377 schools offered short-course vocational training programs to 313,100 students.

(c) Rajamongala Institute of Technology (RIT)

All programs being offered at RIT are similar to that of DOVE and OPEC except for teacher training and degree programs. The thirty campuses of RIT are located throughout the country. In 1992 academic year, RIT provided formal programs to 65,505 students with 3,678 instructors.

In addition, a large number of short-course vocational training program are also provided by the Non-Formal Education Department through its Regional and Provincial Centres. Most of the program offered are based on local needs.

The National Institute For Skill Development, under the Ministry of Interior, also play an important role in vocational training

3. King Mongkut Institute of Technology (KMIT)

King Mongkut Institute of Technology, North Bangkok, has a College of Industrial Technology which provides TVE Certificate and Diploma programs in various trades and industries.

Table 7
Number of TVE Institutions, Teachers, and Students in 1992 Academic Year

	DOVE	RIT	OPEC	TOTAL
Institutions	224	30	303	557
Teachers	15,770	3,678	10,745	30,193
Students*	258,896	65,505	291,625	616,026
Teacher : Student Ratio	1:16	1:18	1:27	1:24

*Student in formal schooling system only

Source: MOE statistics 1992 Academic Year

Table 7 shows the number of TVE institutions under DOVE, RIT, and OPEC which are 224, 30, 303 respectively. Number of TVE students in public institutions under DOVE and RIT compared with those in private institution under OPEC are 53 per cent and 47 per cent respectively. The number of teachers in private TVE institutions is smaller than that in public TVE institutions under DOVE and RIT. Teacher and student ratio of TVE private institutions, 1:27, is higher than that of in public TVE institutions (DOVE 1:16, and RIT 1:18). This may result from the fact that public TVE institution under DOVE and RIT concentrated on industrial programs while private TVE institutions mostly provided business-related programs which require a small number of teachers as shown in Table 8.

Table 8
Number of TVE Students by program in 1992 and 1993

Program	1992		1993	
	Total	%	Total	%
Trade and Industry	269,532	43.8	296,582	43.9
Business	291,504	47.3	320,659	47.5
Arts and Crafts	17,743	2.9	10,923	1.6
Home Economic	19,129	3.1	30,332	4.5
Agriculture	18,118	2.9	16,365	2.4
Total	**616,026**	**100**	**674,86***	**100**

Source: MOE Statistics, 1992 Academic Year

Table 8 presents the number of TVE students by program in 1992 and 1993 academic year. The largest number of students accounting for 291,504 (47.3% in 1992) and 320,659 (47.5% in 1993) are in business programs. Approximately two-thirds of the students are in private vocational schools. Trade and industrial programs make up the second largest number of students, 269,532 and 296,582 students in 1992 and 1993 respectively. The number

of students in trade and industry, business, and home economics has increased while students in arts and crafts, and agricultural program has declined. This is due to the rapid growth of the industrial and service sectors which require more manpower. Trade and industry, business and home economics programs attract more students.

Table 9
Budget of Vocational and Technical Education as Compared with Budget of the Ministry of Education

Unit: million baht

	1992	1993	1994
Ministry of Education	69,555.8 (100%)	88,177.3 (100%)	100,304.1 (100%)
Department of Vocational Education (DOVE)	4,598.7 (6.6%)	5,832.8 (6.6%)	6,936.8 (6.6%)
Rajamangala Institute of Technology (RIT)	1,501.8 (2.1%)	1,854.3 (2.1%)	2,038.7 (2.0%)

The total budget of Vocational and Technical education has been about 8 per cent of the total budget of the Ministry of Education during 19921994. Dove was allocated 6.6 per cent - 6.9 per cent while RIT received 2.0 per cent - 2.1 per cent. Even though the amount of budget has been increased, the per percentage shared in the Ministry of Education's budget did not increase. Expenditure per head of TVE student was 14,439.3 baht, 16,198.4 baht, and 18,804.9 baht in 1990, 1991, and 1992. It was projected to increase at least 2,000 baht per year throughout the Seventh Plan (1992-1996).

3. PROBLEMS

Even though the TVE system in Thailand has played an important role in producing middle level manpower to fulfil the actual needs of the labour market and the development targets of the country, many problems still exist; especially, in an era of rapid growth of the economy and technology.

1. There is no legislation to enforce participation of industries in TVE. Cooperation and coordination between TVE institutions and industries depend on personnel's effort and personnel relationships as well as the willingness of industries.

2. Technology and equipment in industries have been changed rapidly, while TVE institutions are unable to keep abreast with those changes due to the limitation of staff capacities and budget.

3. A large number of technical teachers cross over to industries, and the new technical teacher graduates are not interested in teaching jobs. This has caused a continuing problem of technical teacher shortage in many fields.

4. Due to the rapid growth of the economy, especially in the manufacturing and services sectors, manpower shortages prevail in many fields such as mechanics, metallurgy, electricity, electronics, modern agriculture, tourism, business, management, etc. However, the TVE system does not respond effectively in both quantity and quality.

5. The biggest source of budget for TVE is based on government, which mainly allocates for recurrent expenditures. Capital expenditures for buildings and new equipment are allocated only about 20 per cent -

30 per cent of the total budget. As a result, new equipment slowly replaces the out-of date equipment. The under-investment in TVE in some field has been considered.

6. Research studies for policy decisions, innovation for management, teaching media, and equipment are not substantially considered and financed.

7. International linkages on TVE for exchanging of information and experiences are still limited.

8. More and more students apply for TVE programs but only about 40-45 per cent are admitted . Social demand for TVE puts pressure on expansion of TVE programs. As a result, TVE is unable to fully respond to industrial development.

9. Information about manpower requirement information of industries are not substantial for long term program planning.

10. Computers have become a basic requirement for employment of the graduates but TVE institutions face problems of staff qualification and the substantial number of computers required to provide extensive computer training to every student.

4. HUMAN RESOURCE DEVELOPMENT POLICIES AND INNOVATION MEASURES

4.1 NATIONAL POLICY

Human resource development has been a major issue of Thailand because the majority of the labour force have only primary education. According to the Seventh Plan, a major issue in human resource development is to expand basic education from six to nine years in a gradual and systematic manner and increase in transition rates from primary to lower secondary education from 46.2 per cent to no less than 73 per cent by the end of the Plan (1996), with special emphasis on rural poor areas with low transition rates. Furthermore, those who are out of the school system and already in labour force with primary education and without skill training are also taken into consideration is their quality of life.

The Seventh Plan has the following development targets for human resource development: population, education and training, upgrading of income, and labour welfare services. Education and training is a major target of human resource development which includes the following strategies

1. Place high priority on expansion of secondary education.

2. Develop medium and high skill manpower in quantity and quality terms in fields experiencing shortages, and in line with market demand as follows

   2.1. Speed up production of technologists, and technicians.

   2.2. Develop information system with up-to-date data on the labour market situation

   2.3 Speed up development and training of teachers in shortage fields by: seeking assistance from foreign countries, coordinating with enterprises, encouraging rotation of persons among educational institutions, providing incentive in various forms to teachers in areas facing shortages

   2.4. Encourage public higher education institutions to have greater independence and self-reliance

   2.5. Promote provision of higher education

3. Encourage and support a greater private sector role in providing education and training services.

4. Improve provision of life-long education.

Other issues on human resource development in the Seventh Plan include:

1. Organise educational and skill training systems to enable the various target labour groups to realise their full potential and to raise their capability so that they can adjust to the rapidly changing economic environment.
2. Prevent, as well as solve problems arising from social conflicts during the transitional period, paying particular attention to raising the capability of the underprivileged who cannot help themselves, and who have difficulties adjusting to change.
3. Reduce negative impacts on the quality of life from environmental degradation caused by rapid urbanisation, industrialisation and deterioration of natural resources.
4. Encourage and support development of the quality of life in line with the nature of problems and needs of the various age groups, from childhood, youth, working age to old age, by providing life-long education.

As described above, education and training are major tools for human resource development which will lead to the improvement of quality of life, income raising, reduce social problems, and alleviate environment degradation.

4.2 FUTURE SITUATION RELATED TO TVE

According to the aforementioned details, Thailand has a rapid economy growth, especially in industries and service sectors, resulting in great demand on manpower for those two sectors.
The agricultural sector has become a smaller sector in both production and output, and manpower shortages in many fields will continue to exist and become the obstacles for development. The following are future situations with regard to the TVE system:

1. Increased numbers of technicians and technologists will be required in every economic sector.
2. Agriculture will be a smaller sector but the most important economic base of Thailand.
3. New technology and innovation will be introduced more and changed rapidly in production process.
4. More and more youngsters and adults will require TVE.
5. Automatic tools, equipment, and other facilities will be widely used in daily life.
6. Decentralised system of government authority will be implemented.
7. Industrial experience will be required by TVE teachers.
8. Environment problems will be increased.
9. International cooperation and competitiveness in world trade will be increased.
10. Shortage of manpower in some fields related to industrial development will continue to prevail.
11. Service occupations will be increased and changed according to life style of the future.
12. Shortage of food and other agricultural products will continue to be a major problem in developing countries.

4.3 CHANGE OF TVE

In order to produce required manpower effectively and efficiently, TVE needs to be changed as follows:

1. TVE must have 'more user control' by employers of the graduates; communities must have more impact on education; institutions and the educational bureaucracy should have less control.

2. TVE must be more flexible, that is the TVE system needs to respond to the demands of parents, students, communities, and the employers of graduates.

3. TVE must provide greater choices, a large number of programs should be offered according to the needs of the individual, communities, and the labour market.

4. High and new technology need to be integrated in the program offered through cooperation with industries.

5. Foreign languages and Computers must be core courses.

6. Multi-skill training in some areas must be emphasised while mono-skill also needs to be offered in depth for specialised skills.

7. Different approaches in providing TVE program will be introduced to offer more students, and more choices.

8. Exchange of information related to TVE among member countries should be strengthened.

9. Incorporation of environmental education into TVE should be taken seriously.

10. Agriculture program in TVE will emphasise an integration of new technology and local knowledge.

11. TVE staff must look beyond their schools to external needs: occupation, technology, labour market, and individual.

5. POLICIES TO PROMOTE CLOSE LINKAGES BETWEEN TVE INSTITUTIONS AND INDUSTRIES

As mentioned before. Thailand has experienced rapid growth; especially in industrial and service sectors. A shortage of qualified manpower has become a major problem for the country. Even though vocational and technical eduction in Thailand has been an important system and has produced a large number of graduates, a mismatching of graduates in both quantity and quality still exists. Therefore a major policy on human resource development in the Seventh National Development Plan (1992-1996) should speed up the production of TVE in the fields where there are shortages as well as improve the quality of existing TVE Programs.

Encouraging participation of enterprises in TVE has become a major issue to speed up production and quality improvement. This is to make sure that TVE graduates match industrial requirements. Furthermore, TVE institutions can avoid waste of resources and time by producing matching graduates. A national policy which encourages participation of enterprises includes the following:

1. Encouraging and supporting a greater private sector role in providing education and training .services.

   - Liberalise the education sector by improving and relaxing rules and regulations.

   - Encourage cooperation between public education and training institutions and private .enterprises in organised skill training programs in various forms such as .apprenticeships etc.

2. Facilitating private sector participation in the planning of education and production of .manpower as well as in formulating curriculum and training to ensure that the quality of the graduates meets demands of the labour market.

3. Encouraging close cooperation between education institutions and industries of permit the educational system the better to meet the needs of the labour market and to keep up with technological progress.

4. Allowing schools to undertake projects to increase industrial related experiences and increase student training in factories.

5. Expanding cooperation between schools and factories to encourage more technical education for factory workers and more practical factory training opportunities for students.

6. EXISTING LINKAGES

The existing linkages between TVE institutions and industry are developed through personal relationship and the willingness of industries. There is no law or any regulation to enforce formal participation of industries in TVE, even though TVE educators have striked for more than ten years. However, during the past few years, TVE institutions and central authorities have extensively worked with industries because of manpower shortages problems.

The existing linkages between TVE agencies and industries can be divided into two levels at the central level, and at the institutional level.

1. At the central level, linkages with industries are developed through the National Committee which is composed of a number of representatives from industries. Policy issues, guidelines, and macro solutions to problems related to TVE will be provided at this level. Core curriculum, which is developed at the central level, will be also involve industry's recommendations.

2. At the institutional level, participation of enterprise includes the following activities:.

   - On-the-job training of students
   - Job placement
   - Pilot project on small scale enterprises
   - In-service training of staff
   - Research and development of technical and vocational education system
   - Curriculum and teaching media development
   - Funding for institutional activities

As mentioned before, participation of enterprises in technical and vocational education in Thailand is not based on any act but with their consideration and willingness. Therefore, the degree of participation of enterprises is still reliant upon institutional personnel's efforts and personnel relationships.

CASE STUDY 1

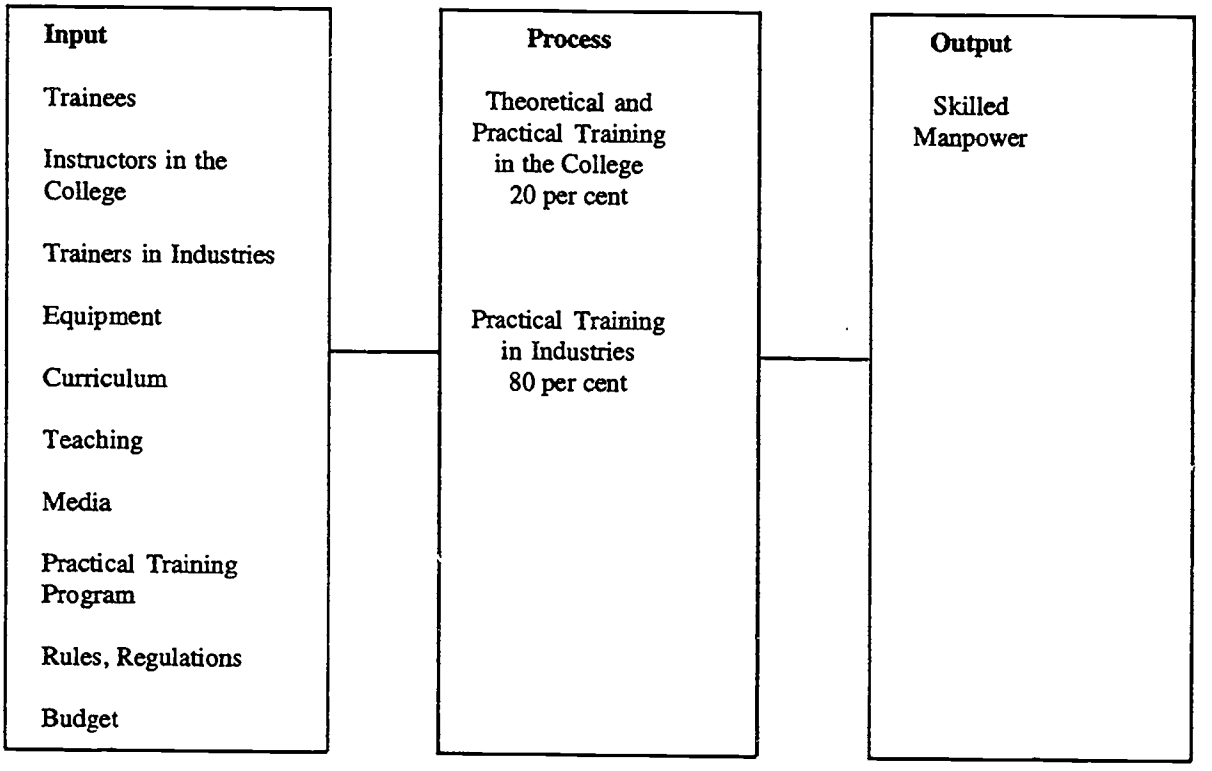
The Dual System

Background

In 1988, the Dual System which is a German approach to technical and vocational education was adopted in Thailand. It is believed that the dual system will lead to true cooperation between enterprises and institutions, and between job seekers and their prospective employers. With technical and financial assistance of the Government of the Federal Republic of Germany through GTZ, a pilot project started at one technical college Ta Luang Technical College, which is the college donated by the cement Industry.

The College worked cooperatively and systematically with industries in providing training at the college one day, spending four days (in a week) in industries. The teaching and learning process involves about 20 per cent theoretical aspects and 80 per cent practical aspects. Each trainer is required to spend three years or 4800 periods practical training in the college, and 2240 periods on-the-job training in industry in order to complete the program. Entrance qualification is the completion of Grade 9. In 1991, the first group of trainees or 20 trainees completed the program and proved to be very successful in the labour market. The project has been improved and extended. In 1993, there are 130 industries, 17 fields in 13 colleges and 550 students participated in the project.

Figure 3
Dual System of Technical and Vocational Education



Principle of the Dual System

1. The program is provided according to the needs of industries.
2. Trainees belong to industries, who are selected and supported by industries.
3. Trainees sign a contract for skill training in industry and register with TVE institutions for theoretical subjects learning.
4. The curriculum of this program must be agreed by both TVE institutions and industries.
5. The completion of this curriculum will require three years with approximately 20 per cent theoretical and 80 per cent practical training.
6. TVE institutions must take responsibilities in providing theoretical training for about 1-2 days per week, while industries provide skill training or practical experiences about 3-4 days per week by providing trainers in industries. All trainees must keep records of their training activities.

Guidelines for Development of Dual System Program

1. Industries will inform TVE institutions that they need to upgrade their workers through the dual system program

2. TVE institutions work closely with industries in developing the curriculum.

3. Coordination and cooperation with clear responsibilities, and duties of each party in dual system program are required.

4. TVE institutions and industries work cooperatively in the following activities:

   - Identifying target number of trainees
   - Identifying period or length of program
   - Identifying fields or areas of speciality
   - Developing curriculum
   - Developing theoretical skill training plan
   - Supervising follow-up teaching, learning, and skill training activities
   - Measuring and evaluating learning achievement according to the designed curriculum
   - Standardising and certifying the graduates

Program Measurement and Evaluation

Program measurement and evaluation must be organised and implemented by joint-committee between TVE institutions and industries. At least seven persons comprising one representative from industry serving as chairman, three instructors of TVE institutions, and three representatives from industries.

Measurement and evaluation of the dual system program is the same process as that of other TVE programs. However, there are special features of trainees' achievement measurement and evaluation as follows:

1, At the end of the third semester or first half of the curriculum, trainees will be measured in theoretical knowledge and practical skills by the joint-committee

2. At the end of the curriculum or the sixth semester, the joint committee will evaluate the trainees' achievement in theoretical knowledge, practical skills, and ability in implementing such knowledge and skills to complete the project in a limited period of time. A trainee who will complete the program; therefore, must pass all theoretical tests by the end of the sixth semester, submit a complete project, and have skill training as required by the curriculum.

Lessons in Implementing the Dual System

Achievement

1. Linkages between TVE institutions and industries have been formally developed and strengthened.

2. Industries received qualified manpower.

3. The problems of limited workshop and equipment are alleviated because practical or skills training is carried out in industries.

4. There are an increasing number of industries considering the importance in participation with TVE institutions.

5. The graduates of the dual system program match the needs of industries.

6. Opportunities on TVE are extended to work force in industries.

7. The dual system program has become a prototype program for starting systematic cooperation between TVE institutions and industries.

Limitations

1. The dual system program is a new approach for TVE in Thailand. TVE administrators, industries, and the target group of training were needed to clearly understand and actively participate in the program. However, during the starting period of the program a small number of trainees and industries were involved.

2. A typical dual system of German approach needs to be implemented, with the law to enforce participation of industries. No such law exists in Thailand. As a result, involvement of industries in this program depended on efforts of TVE institutions' personnel only.

3. Thai industries are mostly comprised of small industries which require a work force with non-formal or on-the-job training only. Consideration of the advantages of a dual system program has been limited.

4. Some TVE staff misunderstand the concept and implementation strategies of dual system resulting in distortion of goals and objectives of the program.

5. Industry's lack of well-trained trainers, and TVE institutions' lack of instructors for supervising the trainees are limitations.

6. Graduates from the dual system receive a certificate which differs from that of TVE in the formal system, however, trainees of dual system prefer to receive a certificate with equivalence to or the same as graduates in the formal TVE program.

Guidelines for Improvement

Dual system will be the best participatory mechanism of enterprises in TVE, if the following aspects are considered.

1. Dual system should be adapted to meet the industrial environment and social demand of each community:

2. All implementing agencies of the dual system program need to be clearly informed and take full responsibilities to fulfil the achievement of the program.

3. TVE staff should be trained in developing continuous relationships and linkages with industries.

4. Guidance and counselling on the dual system program needs to be extensively provided to the public. Special emphasis should be presented on the advantage of the program for the individual, industries, and the community.

5. Sharing of benefits should be the principle of participation.

6. Incentives for industries to participate in TVE should be created through improving and relaxing related rules and regulations.

7. TVE institutions must demonstrate sincerity and seriousness of cooperation and coordination with enterprises.

8. Cooperation and coordination should be systematic, continuous, and well-planned.

CASE STUDY 2

Cooperative Program between the Department of Vocational Education and Telecomasia Public Company Limited in Development of Telecommunication Technology Manpower.

Background

One indication of a country's development level is its telephone density. Thailand's telephone density is 36 per 1000 population whiLE other ASEAN countries' density is at the average of 9 per 100. The widespread lack of efficient telecommunications networks in the country is considered to be an impediment to growth. Therefore, an important economic growth target set for the Seventh Plan (1991-1996) is to expand the basic infrastructure services of telecommunications. However, there is a shortage of trained technicians in advanced telecommunications technology in training institutions.

In 1993, Telecomasia Corporation Public Company Limited (TA) which is one of the biggest telecommunication company in Thailand approached the Department of Vocational Education (DOVE) to develop linkages for training technicians and skill manpower. TA takes responsibility for installation of telephones in Bangkok and the nearby areas. The target telephone installation figures for the end of 1996 is two million. TA, Along with other telecommunication companies, has faced the problem of manpower shortages in this field. Hiring foreign engineers and technicians is limited by many factors.

There is not only the intention to solve manpower shortage problems but also a commitment to participate in human resource development of the country and society. TA began working with DOVE in the project entitled "Cooperative Program between the Department of Vocational Education and Telecomasia Public Company Limited in Development of Telecommunication Technology Manpower".

Objectives of the Project

1. To prepare telecommunication technology technicians and skilled manpower for the expansion of telecommunication industries

2. To provide knowledge and skills to instructors and students relevant to changes in telecommunication technology

Cooperative Activities

1. Curriculum development

2. Instructors' training

3. On-the-job training of students

4. Development of equipment, teaching materials, and provision of scholarships

Targets

1. Ten technical colleges are involved in the project

2. Seventy-five instructors in those ten colleges will be trained

3. During five years of the project, the total of 800 technicians and 1200 skilled manpower will be produced

Project period

Five years (1993-1997)

Budget

Both DOVE and TA will share the expenditures of the project as follows:

- DOVE is responsible for expenditures in training processes of students at the technical colleges, and producing training media for instructors and students

- TA is responsible for expenditures in training instructors, on-the-job training of students, necessary training materials, equipment, and training media

Findings

1. This project is implemented smoothly and successfully because was introduced by the president of TA. The policy level of both DOVE and TA is strong ensuring achievement of the project. Therefore, an important strategy to develop linkages with industries is to make industrial top administrators or policy level a..are and to commit themselves to a cooperative project with TVE.

2. Curriculum developed by the TVE institutions will only be completed after consultation with industries. After working with TA, DOVE has realised that some necessary competency for working in telecommunication technology fields does not appear in the curriculum while some of them need to be deleted from the curriculum. The other important observation is that competency in the use of computer and English must be an integral part of every program.

3. Telecommunication technology equipment is expensive. Students will not be exposed to new technology in this field without having on-the-job training in industry. Some equipment is donated to TVE institutions if it is considered necessary.

4. TVE instructors should be provided with industrial experience or on-the-job training in order that they can transfer such experience to students.

5. Trainers in industries as well as TVE personnel who will be responsible for the cooperation project need to have a well trained program for the cooperative technique.

6. A steering committee and a working committee need to be formed to monitor the project.

7. Administrative structures and working systems in he TVE institutions must be provided as channels for developing linkages with industries.

8. In an era of growing economy it can be said that wherever shortages of technicians and skilled man power exists, the need for developing linkages with TVE also exists. Therefore, TVE institutions need to be active in finding information related to the shortages of manpower, kinds and types of industries, and try to develop linkages with them.

CASE STUDY 3

Cooperative Programme between Kanjanaburi Polytechnic College and Siew-National Company

Background

Siew-National Company Limited is a big company responsible for distributing electronic appliances which are produced by Thai National Factory and other Japanese factories. There are a large number of sale representatives that shop throughout the country. However, all those electronic appliances shops are faced with the problem of a lack of skilled workers for electronic appliance services, and most of the existing workers are not qualified. If this problem is not solved, some representative shops can not exist because there are no skilled workers providing services for after-sale merchandise.

Siew-National Company Limited, therefore, contacted Kanjanaburi Polytechnic, which provides short courses for training of adults in many fields, including electronic appliance services. Moreover, Kanjanaburi has worked cooperatively with Siew-National Company Limited in training electronic instructors four timeS during the past few years. Therefore linkage has already been established. As a result, a cooperative project was carefully designed, revised, approval received, and signed by the General Manager of Seiw-National Company and Deputy-Minister of Education. Details of the project are as follows:

Objectives

1. To produce skilled electronic service workers for electronic appliance shops and companies
2. To upgrade and update existing workers

Targets

1. Produce 80 new skilled workers in electronic service
2. Upgrade and update the existing 80 electronic service workers

Cooperative Activities

1. Curriculum development
2. Instructors' training
3. Equipment procurement
4. On-the-job training of trainees

Special Features

1. All trainees are recruited by the company and their tuition and fees, living expenses, textbooks, and other training expenses are paid for.
2. Trainees are trained in Kenjanburi Polytechnic College for 8 weeks or 240 hours, and on-the-job training in the company for eight weeks or 240 hours. The total training period is 10 weeks or 480 hours.
3. Training processes in both training institutions and companies not only concentrate on the skills required by the labour market, but also working habits are emphasised.
4. All trainees who complete the training program are employed in electronic appliance companies or shops throughout the country.

Findings

1. This program was developed by the past links which were approached through instructors' training programs.
2. It presumes that incentives for the company can work with Kanjanaburi Polytechnic College in the alleviation of shortages of skilled workers and by saving the company's resources by organising training activities for them.
3. Instructors in electronic areas have a chance to experience new technology in the field by working with company personnel.
4. The accomplishment of this project not only results in support from top administrators of both the company and the Ministry of Education, but the efforts and willingness of the training institution staff in working with industry.

5. Mutual benefit for both industries and training institutions is clearly identifies and all concerned personnel were informed.

Similar cooperative programs with industries are also being developed at central level and institutional level at DOVE. The following are instances of the projects:

- Development of Automechanic Technology Program
  - Cooperation with Thai-Europe Corporation Auto Sale
- Development of Hotel Management Program
  - Cooperation with Phuket Tourist Association
- Development of Retail Program
  - Cooperation with Seven-Eleven Company Limited
- Development of Electronic Services Programs
  - Cooperation with Siew-National Company
- Development of Jewellery and Ornament Program
  - Cooperation with Jewellery and Ornament Trade Association

REFERENCES

Chalongphob Sussangkarn and Charles N. Myers, *Educational Options for the Future of Thailand*, Chai Pattana Foundation/TDRI 1991 Year-End Conference.

Department of Vocational Education, *Dual System Program*, 1993 (in Thai).

Hallak, Jacques, *Investing in the Future : Setting Educational Priorities in the Development World, UNDP program*, Oxford England : Persimmon Press, 1990.

Ministry of Education, *Educational Statistic 1992*, The Office of Permanent Secretary, Ministry of Education, 1992. (in Thai).

National Economic and Social Development Board, Office of the Prime Ministry, *The Seventh Development Plan (1992-1996)*, Bangkok : United Production Ltd. Part 1992.

National Statistics Office, *Labor Force Survey*, 1980, 1985, 1990, 1991 .

Somchob Chaiyavej, *Strategies and Policies for Technical Education and Vocational Training Staff Development*, Bangkok: Department of Vocational Education, 1992.